

# **Indian Rose Annual - IRA 1984**

## **WHITHER GOES THE ROSE? VISTAS IN ROSE HYBRIDISATION**

By M.S.Viraraghavan, Kodai Kanal

The rose is, and has been for centuries, the world's favourite flower. History, and symbolism, colour and fragrance and sheer elegance of form - whether classic beauty of the single bloom, or the complex perfection of the modern Hybrid-Tea – all combine to give the rose its pre-eminent position. Even the prickles (thorns) have romantic associations.

With all this, it would be a mistake to assume that the rose will always retain its pre-eminence, unless there is constant effort to improve and enhance the attractiveness of the rose by imaginative hybridization. The keyword is really imaginative – and that is where amateur rose hybridization will have to play a dominant role- much more so than it has done in the past. The warning signs – the limitations of commercial rose hybridization – are already evident. One has only to leaf through the new rose catalogues to realize that the flood of new H.T's floribundas, and other standard types pouring out from the big rose growers, are not really particular improvements on the standards attained in the past. These improvements will not contribute to the future of the rose. In fact they are only evidence of increasing, and, potentially disastrous economic pressures- to produce something new. The future of the rose is and will become increasingly more dependent on amateur rose hybridization, backed up by the support of rose societies throughout the world.

Dose not this last statement place an excessive emphasis on amateur rose breeding, you may well ask? The answer may not be very clear in India, where the popularity of the rose is still at the stage of spectacular growth. But the trend in other countries- even in the U.K. which has traditionally been the home of the rose- is not so encouraging. I quote from an article 'Roses and Modern Times' by Jack Harkness (American Rose Magazine, August 1982): 'When I began to breed rose in 1962, it was boom time for roses in Britain. The British nursery trade was budding around 50 million roses, one for every man, woman, and child in the country. The Royal National Rose Society was coasting along towards enrolling its 100,000<sup>th</sup> member. As proof of its confidence in the future, the R.N.R.S. took possession of its own country property near St. Albans, and began to cultivate it as a fine rose garden. Twenty years later, in 1982 the scene has changed. We are producing about half as many roses for sales and the Society has retained only a third of its membership. What went wrong?'

What went wrong was that rose breeding proceeded on too conventional lines, without taking into account the rapid changes taking place in public tastes, leisure time, economic pressures, and the like. Though there was a response to these changes on the part of the commercial breeder, this was hardly adequate, as the statistics given show.

In other words, rose breeding wasn't imaginative enough. And this as I said earlier, is where the amateur breeder comes in, as no commercial breeder can really afford to concentrate mainly on even slightly long – range objectives – his emphasis will have to be on what is immediately saleable.

In fact, developments in other ornamental plants, perhaps not as popular as the rose, show clearly even now, that commercial plant

breeding will have to give way, sooner or later, because of sheer economic pressures, to the efforts of amateurs supported by specialist societies, for example, in the delphinium (which is one of the most popular border plants in the U.K) the premier English firm of Blackmore & Langdon, which had contributed greatly to delphinium development, has already stopped delphinium breeding because costs make it no longer viable. But, the future of the delphinium is in safe hands says Mr. Stephen Langdon, of Blackmore & Langdon, as the challenge of the improvement has been taken up by score of amateurs with the backing of the Delphinium Society of U.K

You may therefore, expect in the future a greater emphasis on non-professional breeding work. While on this, we may note that the Presidents International Trophy awarded by the R.N.R.S (Royal National Rose Society, U.K) (The premier award) has gone in 1980, to REBECCA CLAIRE, an amateur raised rose, and in general, the amateur's performance has been noteworthy in the 80s.

With this broad perspective, we could consider the situation more specifically in India. In India there has never been large scale commercial rose breeding of the type in the west, though the first nurserymen did do rose breeding. I am referring to the pioneering work of Sri Bhattacharji of P.Bhacharji & Co. followed up in more recent times by Shri G. Kasturirangan of K.S.G. Sons, Bangalore. But the contribution of the amateurs, inspired by Dr. B.P. Pal as well as the efforts of the I.A.R.I. whose efforts, albeit professional, are hardly commercially motivated have been equally, if not more significant.

However, without belittling the work done, one has to admit that there has not been so far, a bold response to the challenge of breeding better roses for India. ***What we really need is a separate line of breeding for the warm tropical climate***, and more crosses between

standard varieties evolved in the west, which have been selected for good performance in cold climates, will not lead us very far. We have to recognize that rose breeding in the West has been quite rightly motivated towards evolving winter hardy roses which grow vigorously and flower freely in the short summers of temperate climates. Typical results are roses like TROIKA (or ROYAL DANE., H.T. POULSEN) or FREQUE (H.T.KORDES) very winter hardy, and which make enormous growth even in a short space of time. This same extra vigour results in unmanageable and ungainly plants in the forcing tropical weather where the cold tolerance of the variety is hardly relevant.

Or, to put it another way, roses for the tropics should be summer hardy and not winter hardy, and we have to consciously reverse a historical process of selection for tolerance to cold.

This apart, rose breeding at the non-professional level, should carefully avoid the well trodden paths of the Big Boys of rose breeding. There is everything to be gained by being original.

Within this framework, what are the vistas for rose hybridization in India, and, for amateur rose breeding in general?

## 1. BREEDING WITH ROSA CLINOPHYLLA

Taking the long-range aspect, first, the most obvious step is to start an intensive process of hybridization, involving *ROSA INVOLUCRATA* (Roxb. ex Lindl) - also called *Rosa clinophylla* Thory - probably the only rose species of the tropical tracts of India. Perhaps the only species of the tropics anywhere in the world. It is a curious fact that we in India have still not been able to take up rose breeding with this species though far away in the U.K. Mr. E. F. Allen suggested that work with this species was an obvious course of action for breeding roses with better stamina to heat. (see article on Rose Breeding. Pg.125, R.N.R.S. Annual 1977). From the

genetics angle, the main difficulty in taking up work with this species would be that it is a diploid, whereas standard roses are tetraploid. However this can be overcome by the standard procedure of back crossing the F1 generation which would be triploid on to the tetraploid garden rose - which should result in a certain proportion of tetraploid progeny.

But the most serious and practical, difficulty is that getting plants of this species. 18 years back, in 1965, I had obtained a few plants from the Botanical Survey. Of India, but they turned out to be *R. multiflora* which never flowered. More recent efforts through the National Bureau of Plant Genetic Resources, I.A.R.I have not produced any results. Perhaps the Indian Rose Federation should step in and arrange to have the rose species cultivated at an appropriate place so as to be available to rose hybridizers.

## 2. BREEDING POTENTIAL OF *R. EDWARD*/ TEA ROSES.

As every rose grower in India knows, Rose Edward, the pink flowered very fragrant Bourbon Rose, and the Tea Roses do very well under Indian conditions. The Edward rose is grown on a field scale for making garlands even as far south as Tanjavur District of Tamilnadu, relishing the humid tropical climate. Tea roses are common everywhere in India - for e.g., the ubiquitous Mme. FALCOT with its distinctive yellowish green foliage and flowers of apricot blush, can be seen in every old house in Bangalore. The breeding potential of either *R. Edward* or Tea roses has never been adequately exploited for the simple reason that they are not obvious choices for rose breeding abroad, but in India, imaginatively handled, work with these should be very rewarding, provided one always keeps in mind their inherent mildew susceptibility.

## 3. BREEDING FOR DISEASE RESISTANCE

One of the chief reasons why beginners are put off growing roses is their susceptibility to mildew, black spot, and other fungus infections. Of these, black spot resistance is of greater importance throughout India, but fortunately there are some obvious approaches to breeding for black spot resistance. One of the species, *R. bracteata* is immune to black spot. *R. clinophylla* is closely related to this species and may well transmit black spot resistance. Seedlings of *R. bracteata*, like the famous climber, MERMAID were once thought to be sterile, and hence have not been used for breeding in the past. But, recently, the English hybridizer, Le Grice, has introduced a remarkably free flowering milk white floribunda, PEARL DRIFT, (NEW DAWN x MERMAID) which is available in India and which could be used for breeding work. Other sources of black spot resistance are the tetraploid *R. Multiflora* seedlings evolved in the U.S by Peter Semanouik, as well as the Harkness floribundas series starting with SOUTHAMPTON right up to the latest release, MOUNTBATTEN.

As regards mildew resistance I may mention the climber GOLDEN SHOWERS, many of the modern H.T's are also quite mildew resistant – for e.g. SILVER JUBLIEE, PRISTINE , etc.

#### 4. NEW COLOURS

##### 4.1 BLUE ROSE.

As dealt with in my article for the 1982 Indian Rose Annual, the researches of the Japanese biochemist Arisumi have shown that the pigment delphinidin, which could result in the blue rose is present in the leaves of the Floribunda SAMBA (Kordes, 1964) to the extent of 15 percent. Playing around with SAMBA should be quite interesting. That most original of thinkers on rose breeding, Wing Commander Young pointed out long ago that it was derivatives of the old

multiflora CRIMSON RAMBLER, such as the polyantha GLORIA MUNDI that first accounted for the production of pelargonidin, from which are derived all the vermillion roses of today. Speculating further, Wing Commander Young notes that curiously enough, the bluest of the rose produced so far, such as the violet rambler, VEILCHEN BLUE, and the dwarf polyantha, BABY FARRAUX are also derived from Crimson Rambler. It is quite obvious that work with Veilchen Blue and Baby Farraux should produce very interesting results -- we have to again contend with the fact that they are both diploid.

#### 4.2 BROWN COLOURS

One of the England's eminent hybridizers Le Grice, has introduced a series of striking brown coloured roses, such as the floribundas AMBERLIGHT (Egyptian buff) Tom Brown (SATURN RED) and VESPER (Mars orange) here the brown colours were derived by the breakdown of the lilac rose pigment. As mentioned by Le Grice himself in his address to the 10<sup>th</sup> International Rose Conference (see article on breeding of blue and brown roses in 1968 R.N.R.S Annual). To summarize Le Grice further introduction of the genes of the species *R. CALIFORNICA* produced more stable brown colours. Here is a golden opportunity for the enterprising amateur breeder, as the basic work has been done, other sources of brown colour, could be the brownish orange floribunda MOHINI of I.A.R.I and the parchment brown H.T.JULIA recently introduced

#### 4.2 HANDPAINTED STRAIN

Starting with PICASSO, and up to the new release, MAESTRO, Sam McGredy has introduced a series of roses in combinations of pink,

red, white which are referred to as the Handpainted strain, as the proportion of the three colours varies from flower to flower. Further possibilities in this strain are most intriguing, including red and yellow combinations, orange and yellow or mauve variations - these are obvious lines of work for the imagination hybridizer.

## 5. VARIATIONS IN PLANT HABIT

The possibilities under these are innumerable - I will confine myself to two which strike me as most relevant.

### 5.1 CLIMBERS FOR THE PLAINS

As Dr. Pal points out in his book, *The Rose in India*, rose gardening in the plains of India is at a disadvantage, as there are no suitable free flowering climbers. While the ramblers as a class are a complete failure in the plains, even the so called perpetual flowering climbers like GOLDEN SHOWERS do not flower freely. But, as has been suggested earlier, if someone were to start a programme of breeding based on the old Noisette Tea climbers like LAMARQUE or CELINE FORESTIER, both of which flower freely, remarkable results could be achieved.

### 5.2 MINIFLORA ROSES

While miniature roses are increasing in popularity in India, the plants themselves are too delicate and the flowers too small to make much of a visual impact. Under the forcing warmth of the Indian plains, miniatures grow too tall and the small flowers are lost on the giant bushes. There is much potential for breeding work in the newly introduced miniflora series - roses where the flowers are somewhat larger than miniatures, but not as large as floribundas. Typical



examples are the new Sunblaze series of roses from the French hybridizer, Meilland.

## 6. MUTATION BREEDING

Interesting results have been achieved in India by gamma ray irradiation. For example, the work done in the National Botanic Research Institute, Lucknow by Drs. M. N. Gupta and S.K. Datta. Mutation breeding by gamma ray irradiation is hardly suitable for the amateur rose hybridizer. But there are fascinating prospects in breeding work using irradiated pollen. One of the most obviously promising lines would be to use ultra violet radiation to irradiate pollen. Ultraviolet lamps are comparatively cheap and readily available.

To conclude, as is evident from this limited survey, the possibilities of rose breeding are indeed boundless, to the percipient breeder who must be a scientist and an artist - at least a bit of both. The future of the rose depends on such men.



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With all this, it would be a mistake to assume that the rose will always retain its pre-eminence, unless there is constant effort to improve and enhance the attractiveness of the rose by imaginative hybridisation. The keyword is really 'imaginative' —and that is where amateur rose hybridisation will have to play a dominant role— much more so than it has done in the past. The warning signs— the limitations of commercial rose hybridisation — are already evident. One has only to leaf through the new rose catalogues to realize that the flood of new H.T.'s, Floribundas, and other standard types pouring out from the big rose growers, are not really particular 'improvements' on the standards attained in the past. These 'improvements' will not contribute to the future of the rose. In fact, they are only evidence of increasing, and, potentially disastrous economic pressures — to produce something 'new' every year, so as to continue in the race. On the other hand, the future of the rose is, and, will become increasingly more dependent on amateur rose hybridisation, backed up by the support of rose societies throughout the world.

Does not this last statement place an excessive emphasis on amateur rose breeding, you may well ask? The answer may not be very clear in India, where the popularity of the rose is still at the stage of spectacular growth. But the trend in other countries —even in the U.K., which has traditionally been the home of the rose —is not so encouraging. I quote from an article 'Roses and Modern Times' by Jack Harkness (American Rose Magazine, August 1982): 'When I began to breed roses in 1962, it was boom time for roses in Britain. The British nursery trade was budding around 50 million roses, one for every man, woman, and child in the country. The Royal National Rose Society was coasting along towards enrolling its 100,000th member. As proof of its confidence in the future, the R.N.R.S. took



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In other words, rose breeding wasn't imaginative enough. And this, as I said earlier, is where the amateur breeder comes in, as no commercial breeder can really afford to concentrate *mainly* on even slightly long-range objectives —his emphasis will have to be on what is immediately saleable.

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One of the chief reasons why beginners are put off growing roses is their susceptibility to mildew, black spot, and other fungus infections. Of these, black spot resistance is of greater importance throughout India, but fortunately there are some obvious approaches to breeding for black spot resistance. One of the species, *R. Bracteata* is immune to blackspot. *R. Clinophylla* is closely related to this species and may well transmit black spot resistance. Seedlings of *R. Bracteata*, like the famous climber, *MERMAID* were once thought to be sterile, and hence have not been used for breeding in the past. But, recently, the English hybridiser, Le Grice, has introduced a remarkably free flowering milk white Floribunda, *PEARL DRIFT*, (*NEW DAWN* x *MERMAID*) which is available in India and which could be used for breeding work. Other sources of black spot resistance are the tetraploid *R. Multiflora* seedlings evolved in the U.S. by Peter Semanouik, as well as the Harkness Floribundas series starting with *SOUTHAMPTON* right upto the latest release, *MOUNTBATTEN*.

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## 4. NEW COLOURS



(a) **BLUE ROSE:** As dealt with in my article for the 1982 Indian Rose Annual, the researches of the Japanese biochemist, Arisumi, have shown that the pigment Delphinidin, which could result in the blue rose is present in the leaves of the Floribunda SAMBA (Kordes, 1964) to the extent of 15 percent. Playing around with SAMBA should be quite interesting. That most original of thinkers on rose breeding, Wing Commander Young pointed out long ago that it was derivatives of the old multiflora, CRIMSON RAMBLER, such as the polyantha GLORIA MUNDI that first accounted for the production of pelargonidin, from which are derived all the vermillion roses of today. Speculating further, Wing Commander Young notes that, curiously enough, the bluest of the roses produced so far, such as the Violet Rambler, VEILCHAN BLUE, and the dwarf polyantha, BABY FARRAUX, are also derived from Crimson Rambler! It is quite obvious that work with Veilchan Bleu and Baby Farraux should produce very interesting results —we have to again contend with the fact that they are both diploid.

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**CHITRALEKHA** (M. S. Vinayagham Kodaikanal 1982) The rose bears flowers in a rich shade of wine red striped pale pink. A Most distinctive rose with large flowers of perfect exhibition form, held for a long time. This beautiful photograph is by Shri W.P. A.R. Rajaram.



**KADAMBARI** (M.S.Viraghavan Kodai kanal, 1976). Floribunda, Little Darling X (Grussen Teplitz X (Honey Favourite X Unknown)). A good Floribunda with unusually coloured flowers of pastel orange shaded lac red with centre and reverse Ivory. The colour which gradually darkens remains bright to the end.





SEEDLING (M.S. Virraghavan, Kodai kanal 1983). H.T. Rose. One from Virraghavan's hand-painted series to be released.